South Carolina Water Quality Standards

South Carolina Environmental Assistance Conference

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SCDHEC - Bureau of Water

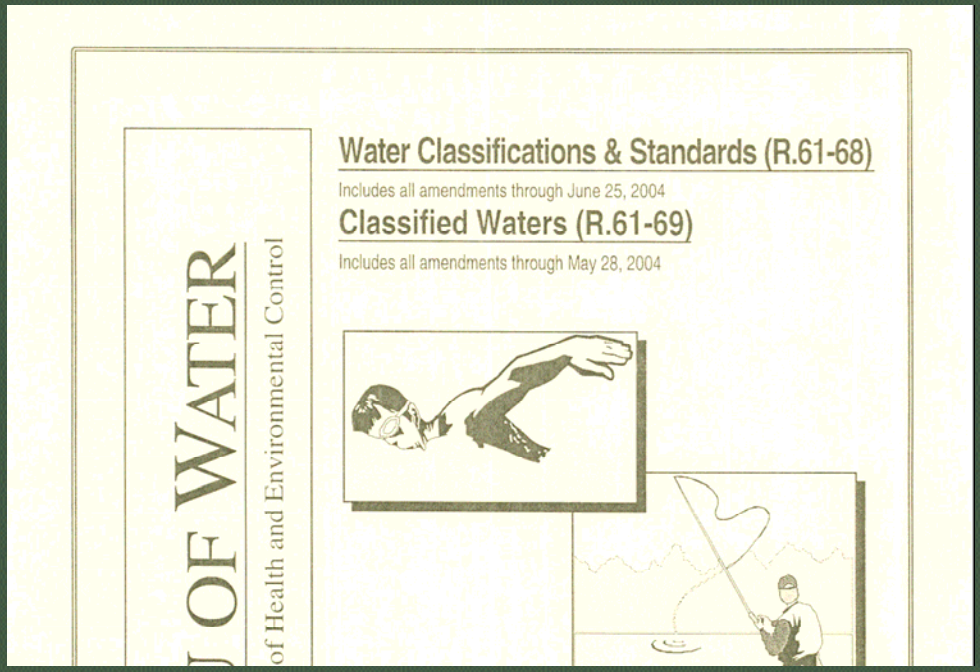
D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

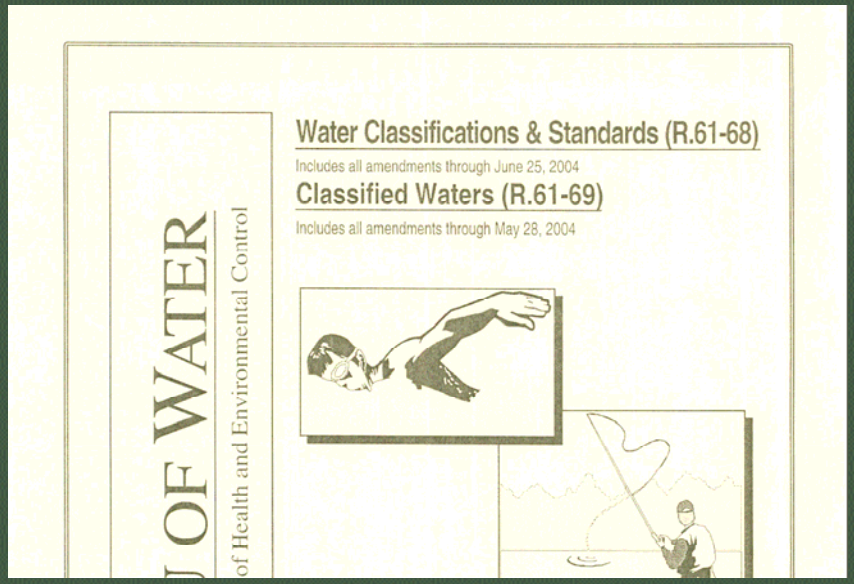
The Water Quality Standards

- 303 (c) of the Clean Water Act requires all states to have water quality standards
- SC Regulation 61-68, Water Classifications and Standards



Regulation 61-68, Water Classifications and Standards

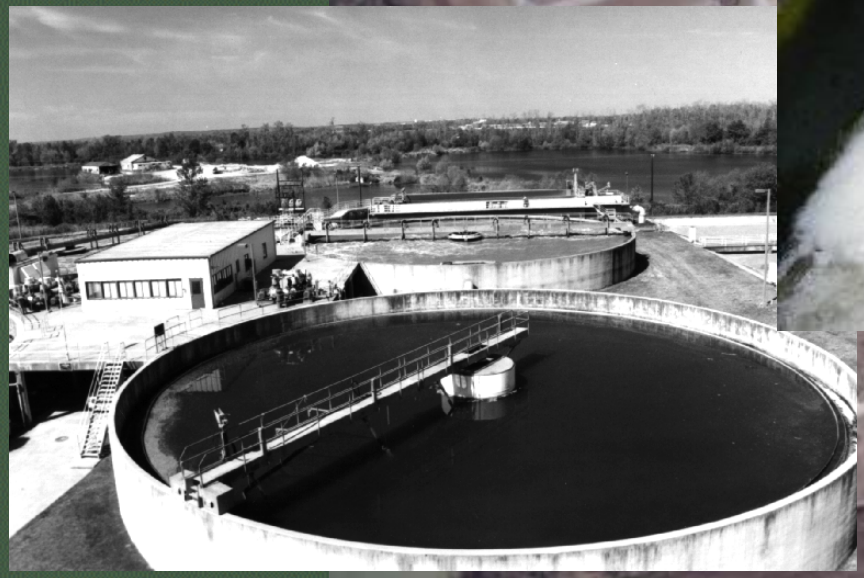
- Establish a system and rules for managing and protecting the quality of South Carolina's surface and ground water.



S.C. Pollution Control Act

- R.61-68 doesn’t define “Waters”
- Pollution Control Act defines “Waters” broadly
- "Waters" means lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the State and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially within or bordering the State or within its jurisdiction.

National Pollutant Discharge Elimination System (NPDES) Permit Limitations



NPDES Stormwater Permits

Stormwater runoff from construction projects must not have an adverse effect on water quality

401 Water Quality Certification

401 Certification is required for any activity that requires a federal permit or license and may result in a discharge into state waters.

This ensures protection of state water standards.

For example, Corps 404 permit to fill wetlands needs a 401.

Elements of the Water Quality Standards

- Three major components of water quality standards program
  - Designated Uses
  - Water Quality Criteria
  - Antidegradation Policy

Designated Uses

- Designated uses are goals set for the waterbody or segment regardless of whether they are being attained.
- The designated use varies between waterbodies
- Fishable/Swimmable presumption

Fishable/Swimmable

- **Clean Water Act Section 101(a)**
  - It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved
- **40 CFR 131.10(j); 40 CFR 131.10(k)**
  - The regulation effectively establishes a “rebuttable presumption” that fishable, swimmable uses are attained.

Water Quality Criteria

- Fishable and Swimmable are the baseline, but the waterbody may have additional uses or “goals.”
- Once we determine the use, we develop water quality criteria to to support it
- Trout waters need different conditions than shellfish harvesting waters
- Antidegradation policies are rules to protect the use from deterioration

Designated Uses

- Freshwater
- Trout Waters
- Shellfish Harvesting Waters

- Outstanding Resource Waters
- Outstanding National Resource Waters
- Class SA and SB Waters

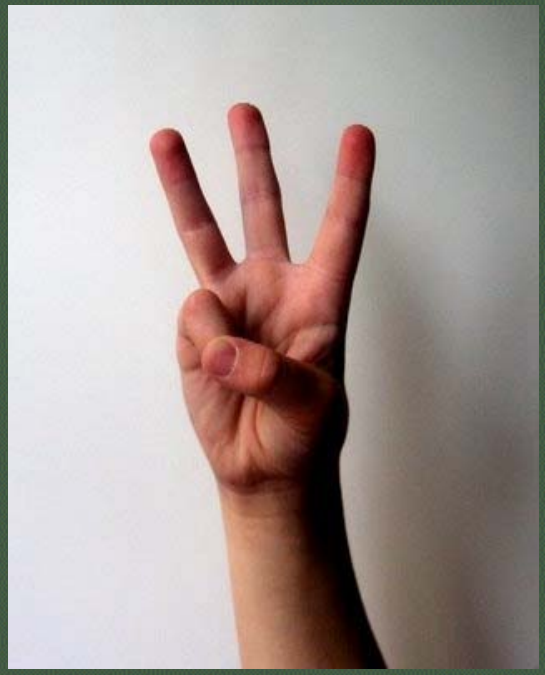
Water Quality Criteria Specific to Use

- Criteria specific to Trout Waters includes higher dissolved oxygen (DO) levels
- Criteria specific to Shellfish Harvesting (SFH) Waters includes much more protective fecal coliform criteria
  - Standard for SFH waters is not to exceed geometric mean of 14/100 ml; with no more than 10% exceeding 43/100 ml.
  - Standard for Freshwaters is mot to exceed geometric mean of 200/100 ml, with no more than 10% exceeding 400/100 ml.

Water Quality Standards - The Basics

- The Clean Water Act requires states to review their standards once every three years to incorporate the latest revisions to the federal criteria as necessary
- The process is commonly referred to as the …

Triennial Review



The Basics

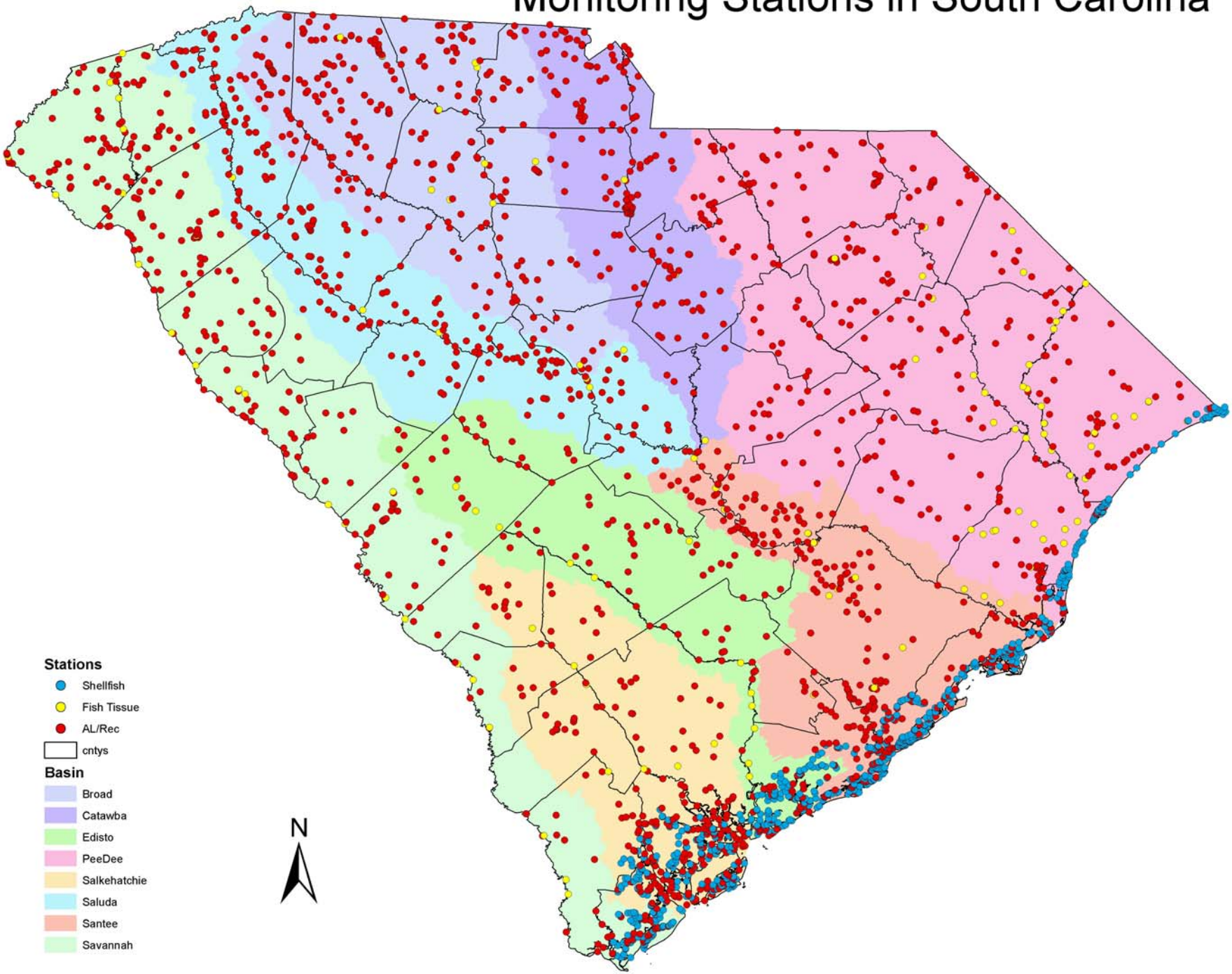
- EPA must approve the State's water quality standards (for CWA purposes)
- States may adopt standards more stringent than those recommended by EPA
- State may adopt alternate criteria so long as it is *scientifically defensible*

Triennial Review Process

- Once adopted by the DHEC Board, state law requires that regulations be approved by the General Assembly.
- EPA must approve the State's water quality standards.

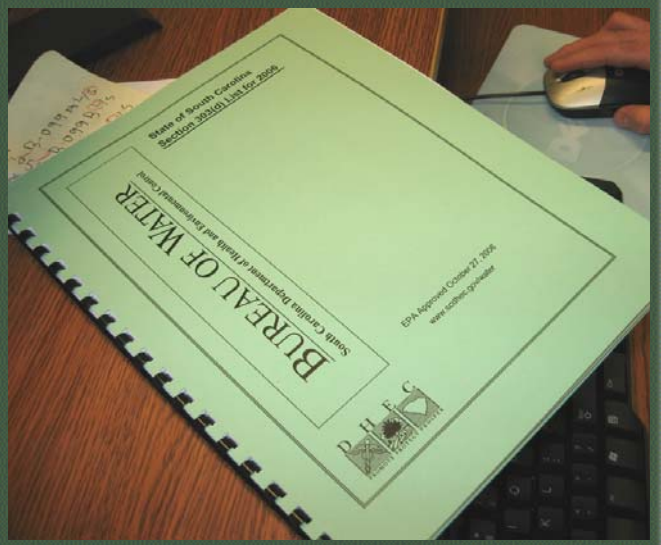
Ambient Water Quality Monitoring Network

Monitoring Stations in South Carolina



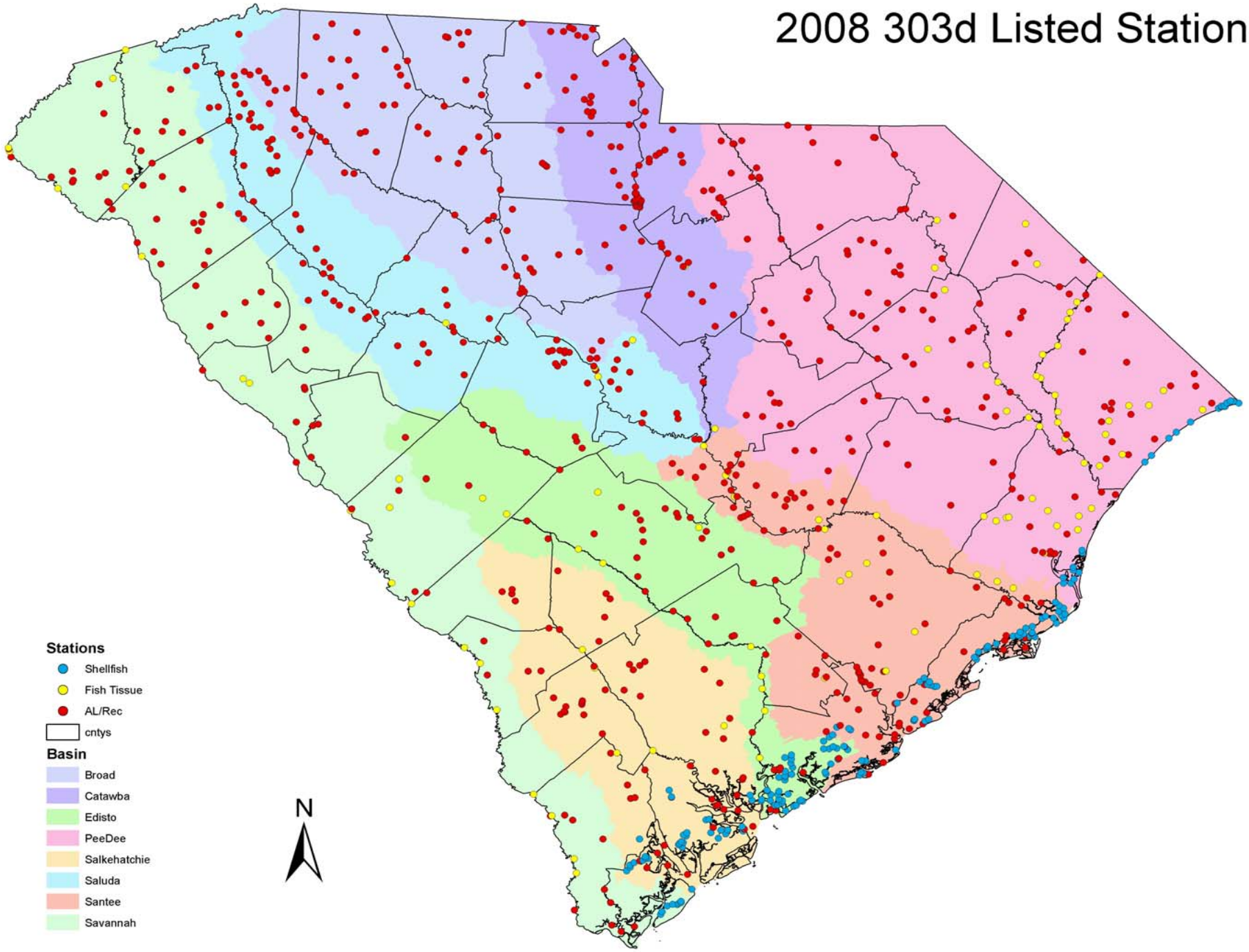
303(d) List of Impaired Waters

- 303(d) of Clean Water Act requires states to submit a list of sites not meeting water quality standards to EPA every two years



- The list is submitted to EPA for approval by April 1 of each **even**-numbered year
- Requires states to develop a TMDL for each pollutant causing impairment

2008 303d Listed Stations



Causes of Impairment Based on 2008 303(d) List

- Recreational - Fecal Coliform Bacteria = 15%
- Shellfish – Fecal Coliform Bacteria = 15 %
- Biological Impairments = 14 %
- Mercury and PCBs in fish tissue = 14 %
- Dissolved Oxygen = 11 %
- Metals = 11 %
- Nutrients = 6 %
- pH = 6 %
- Turbidity = 5 %
- Recreational – Enterococcus Bacteria = 1%

TMDL

Too Many Darn Lawyers

Total Maximum Daily Load

- Maximum amount of **a pollutant** that a waterbody can receive from all sources, and still meet water quality standards
- Maximum allowable amounts of point and nonpoint source contributions, plus a margin of safety
- Allocated among several sources

Total Maximum Daily Load

- A strategy for achieving water quality standards
- Based on the relationship between pollutant sources and the condition of a waterbody
- Describes an allowable pollutant load and allocates it among several sources
- The TMDL is only a strategy and improvements in water quality won't occur unless the plan is implemented

Contact Information

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Regulation 61-68
Water Classifications
& Standards Update

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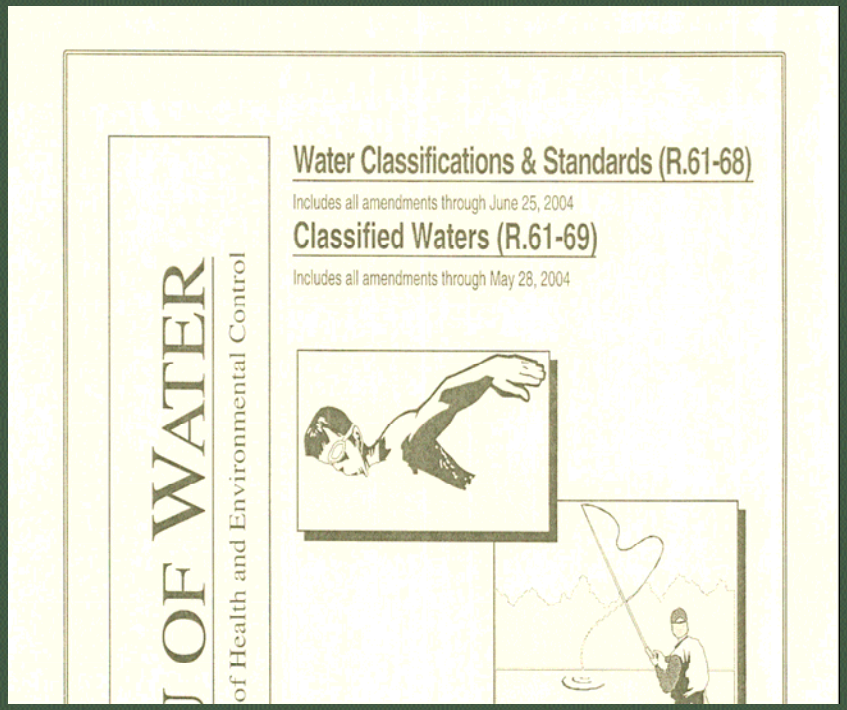
The Water Quality Standards

- SC Regulation 61-68, Water Classifications and Standards
- Provide the basis for many Bureau of Water functions



What are Water Quality Standards?

- Provisions of State law which consist of a designated use or uses for the waters of the US, water quality criteria for such waters based upon such uses.
- Water quality standards are to protect public health or welfare, enhance the quality of the water and serve the purpose of the Act (CWA).

When are Standards reviewed/changed?

- Requirement of Clean Water Act that Standards be reviewed and revised every 3 years (Triennial Review)
- Incorporate Federal revisions
- Incorporate new information
- Consider comments from stakeholders
- Make corrections/revisions

Starting a Triennial Review

Seems like ....

How long does it take to make changes to the Standards?

- Typically about 18 months
- Process requires Legislative review
- Changes cannot be incorporated into permits until approved by the EPA (Region 4 in Atlanta)

Process for Changing the Standards

- Notice of Drafting published (Jan or Feb)
- Stakeholder meetings
- Internal meetings with key staff members
- Initial reading before DHEC Board
- Notice of proposed regulation published
- Staff informational forum
- Hearing before DHEC Board
- Transmitted to Legislative counsel
- General Assembly Review
- EPA Approval

2007-2008 Triennial Review of R.61-68: Timeline

- Started with January 25, 2007 Notice of Drafting
- Worked on issues with Stakeholders throughout the year
- Initial approval to publish Notice of proposed Regulation by Board on October 11, 2007

Timeline ……..

- Notice of Proposed Decision was published in State Register on October 26, 2007
- Staff Informational Forum held November 27, 2007
- Was sent to the Legislative Council following the January 10, 2008 Board Hearing
- Published in the State Register on April 25, 2008
- Mailed to EPA for approval on May 1, 2008
- Changes became effective EPA approval, September 16, 2008

New Notice of Drafting

- Published in the April 25, 2008 State Register
- Three issues:
  - Source Water Protection
  - Variances
  - Nutrient Criteria for Lakes

Source Water Protection

- Location of current language is in R. 61-68.E.14.c.5
- Deals with the dilution flow value used to derive NPDES permits when the discharge has the potential to affect drinking water intakes
- Many issues still in need of further discussion
- Department will continue to work with Stakeholders

Variances

- Tool was added to the Standards in 2004
- Language is in R. 61-68.E.7&8.
- EPA has indicated granting a variance is a change to WQS.
- Department would like to clarify that variances can be granted at the Departmental level, providing that the public has a chance to comment.
- Subject to EPA Approval

Nutrients Standards for Lakes > 40 acres

- Numeric Standards for Lakes of 40 acres or more were added for nitrogen, phosphorus and chlorophyll a in 2001.
- Language is in R. 61-68.E.9(b)
- Numeric Standards were written as a “shall not exceed” value.
- Department continues to look at available data to determine an appropriate duration and frequency.

Future Issues

-Bacterial Indicator

Meetings are being held throughout the State to inform the public about the Department's Activities

-Nutrient Criteria for Rivers, Streams and Estuaries

Criteria under development

Aquatic Life Criteria

EPA is revising the current aquatic life criteria for lead, silver, & selenium, re-evaluating the current aquatic life criteria for ammonia, and developing new aquatic life criteria for atrazine.

www.epa.gov/waterscience/criteria/aqlife/

Criteria under development

Human Health Criteria

Human health criteria or guidance for the following are under development:

Acrolein *Arsenic* *Phenol*

Chloroform *Methylmercury*

www.epa.gov/waterscience/criteria/humanhealth/

What are the Draft Changes

Phenol

Current Criterion	***Updated Draft Criterion***
Water + Organisms	
20,700 µg/l	*10,400 µg/l*
Organisms Only	
1,700,000 µg/l	*857,000 µg/l*

Acrolein

Current Criterion	***Updated Draft Criterion***
Water + Organisms	
190 µg/l	*6 µg/l*
Organisms Only	
290 µg/l	*9 µg/l*

Methylmercury

- EPA published criteria in 2001
- Based on Fish and Shellfish tissue rather than a water column value
- Published in January 8, 2001 Federal Register
- *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*

www.epa.gov/waterscience/criteria/methylmercury/

Contact Information

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Email your information if you would like to be added to my stakeholder list.

Questions?